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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,382	03/12/2004	Hitoshi Ishibashi	250378US2	5640
22850	7590	10/05/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			COURSON, TANIA C	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,382

Applicant(s)

ISHIBASHI, HITOSHI

Examiner

Tania C. Courson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 26-158 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 23APR04, 27JUL04, 09AUG04, 16SEP04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (species shown in Figs. 1-13) in the reply filed on September 12, 2005 is acknowledged. The traversal is on the ground(s) that claims 26-158 should be included because "the claims of Groups I-III appear to be part of an overlapping search area". This is not found persuasive because although the search areas may be similar, there is a burden on the examiner since the species found in Figure 1-13 are different from the species found in Figures 14-44 and Figures 45-54, thus the references used to reject one species may not be applicable to the other species.

The requirement is still deemed proper and is therefore made FINAL.

2. Accordingly, claims 26-158 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim.

Thus, claims 1-25 will be further examined in this action.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):

- a) claim 1, line 10, "image density control unit";

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- b) claim 7, lines 1-3, "the optical detecting unit is arranged not to be opposite the recording medium carried";
- c) claim 9, line 10, "image density control unit";
- d) claim 17, line 11, "image density control unit".

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 9-14, 17-22 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki (2003/0049039).

Suzuki discloses in Figures 1-2, a control method and image forming apparatus comprising:

With respect to Claims 1, 9 and 17:

- a) a plurality of image carriers (42)/an image carrier (42), a color image forming unit (42) that sequentially/repeatedly transfers toner images formed on each of the image carriers onto a recording medium that is carried on a transfer belt (5)/onto an intermediate transfer body (5) to form a color image; an optical detecting unit (13) that transfers a reference pattern for density detection formed on each of the image carriers for each color onto the transfer belt (Fig. 2), and detects the reference pattern transferred (Fig. 1) and an image density control unit (13) that controls image density based on a result of the detection by the optical detecting unit, wherein the optical detecting unit detects both regular reflection light and diffuse reflection light from a detection target simultaneously (Fig. 1), and the image density control unit controls the image density based on a value obtained by subtracting a result of multiplying a diffuse reflection output by a minimum value of a ratio between a regular reflection output and the diffuse reflection output from the regular reflection output of the reference pattern for each color detected by the optical detecting unit (paragraph 61-paragraph 85).

With respect to Claims 2-6, 10-14 and 18-22:

- a) wherein the image density control unit controls the image density based on a relative ratio between the value obtained by subtracting the result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse

reflection output from the regular reflection output of the reference pattern for each color detected by the optical detecting unit, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the transfer belt, detected by the optical detecting unit (paragraph 61-paragraph 85);

- b) wherein the optical detecting unit includes a light source that emits light (13c), and the image density control unit uses a difference between the regular reflection output at an ON time of the light source and the regular reflection output at an OFF time of the light source as the regular reflection output (paragraph 76);
- c) wherein the optical detecting unit includes a light source that emits light, and the image density control unit uses a difference between the diffuse reflection output at an ON time of the light source and the diffuse reflection output at an OFF time of the light source as the diffuse reflection output (paragraph 76);
- d) the optical detecting unit includes a first photodetector that receives the regular reflection light from the detection target (13f), and a second photodetector that receives the diffuse reflection light from the detection target (13g), and light-output characteristics of the two photodetectors are the same (Fig. 1);

- e) wherein the optical detecting unit detects light from three or more of the reference patterns formed for each color (paragraph 92).

With respect to method Claim 25:

- a) a method of calculating an amount of toner transfer on a reference pattern by detecting the reference pattern transferred onto a transfer belt (5) or an intermediate transfer body (5) from an image carrier (42) comprising: detecting both regular reflection light and diffuse reflection light from a detection target simultaneously (Fig. 1), and calculating the amount of toner transfer on the reference pattern based on a relative ratio between a value obtained by subtracting a result of multiplying a diffuse reflection output by a minimum value of a ratio between a regular reflection output and the diffuse reflection output from the regular reflection output of the reference pattern, and a value obtained by subtracting a result of multiplying the diffuse reflection output by a minimum value of a ratio between the regular reflection output and the diffuse reflection output from the regular reflection output in a background of the transfer belt or the intermediate transfer body (paragraph 61-paragraph 85).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-8, 15-16 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Hirai et al. (US 2004/0008245).

Suzuki discloses a control method and image forming apparatus, as stated above in paragraph 5.

Suzuki does not disclose wherein an optical detecting unit is arranged not to be opposite to a recording medium carried and wherein an optical detecting unit further detects a misalignment of a transfer belt.

Regarding claims 7, 15 and 23: Suzuki discloses an optical detecting unit arranged opposite to a recording medium (Fig. 2). Changing the location of the optical detecting unit from the location shown by Suzuki to a location not opposite to a recording medium, absent any criticality, is only considered to be an obvious modification of Suzuki device that a person having ordinary skill in the art at the time the invention was made would be able to provide using routine experimentation since the courts have held that there is no invention in shifting the position if the operation of the device would not be thereby modified. *In re Japikse*, 86 USPQ

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70 (CCPA 1950). Therefore, one skilled in the art would change the location of the optical detecting unit in order to suit the needs of the user of the device.

Hirai et al. teaches an image forming apparatus and method that consists of wherein an optical detecting unit further detects a misalignment of a transfer belt (paragraph 344). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the control method and image forming apparatus of Suzuki, so as to include an optical unit detecting misalignment of a transfer belt, as taught by Hirai et al, so as to provide a greater enhancement in multifunctional use of the device.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above disclose an image forming apparatus and method tool:

Suzuki et al. (US 6,731,888 B2)

Maebashi et al. (US 6,633,734 B2)

Suzuki et al. (US 6,456,803 B2)

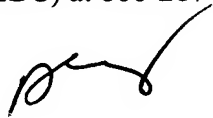
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (571) 272-2239. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245.

The fax number for this Organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DIEGO F.F. GUTIERREZ
SUPERVISORY PATENT EXAMINER
GROUP ART UNIT 2859

TCC
September 29, 2005